



#7/a

SEQUENCE LISTING

<110> Grainger, David J.  
Tatalick, Lauen Marie  
Kanaly, Suzanne T.

<120> Compounds and methods to inhibit or  
augment an inflammatory response.

<130> 295.027US1

<140> US 09/150813

<141> 1998-09-11

<150> US 08/927939

<151> 1997-09-11

<160> 105

<170> FastSEQ for Windows Version 3.0

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Ser Tyr Arg Arg Ile Thr Ser Ser Lys Cys Pro Lys Glu Ala Val  
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<212> PRT

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<213> Homo sapiens

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<400> 9

Lys Gln Lys Trp Val Gln  
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<212> PRT

<213> Artificial Sequence

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<223> A chemokine peptide variant

Glu Ile Cys Leu Asp Pro Lys Gln Lys Trp Val Gln  
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<223> A chemokine peptide variant

Glu Ile Cys Ala Asp Pro Ser Gln Lys Trp Val Gln  
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<223> A chemokine peptide variant

Glu Ile Cys Ala Asp Pro Ser Glu Glu Trp Val Gln  
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Glu Ile Cys Ala Asp Pro Lys Gln Lys Trp Ile Gln  
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<223> A chemokine peptide variant

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Glu Ile Cys Leu Asp Pro Lys Gln Lys Trp Ile Gln  
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<212> PRT

<213> Homo sapiens

<400> 15

Cys Pro Ser Leu Glu Asp Ser Phe Ile Gln Val Ala  
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<212> PRT

<213> Homo sapiens

<400> 16

Met Lys Val Ser Ala Ala Leu Leu Cys Leu Leu Leu Ile Ala Ala Thr  
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 20 25 30  
 Thr Cys Cys Tyr Asn Phe Thr Asn Arg Lys Ile Ser Val Gln Arg Leu  
 35 40 45  
 Ala Ser Tyr Arg Arg Ile Thr Ser Ser Lys Cys Pro Lys Glu Ala Val

50                      55                      60  
 Ile Phe Lys Thr Ile Val Ala Lys Glu Ile Cys Ala Asp Pro Lys Gln  
 65                      70                      75                      80  
 Lys Trp Val Gln Asp Ser Met Asp His Leu Asp Lys Gln Thr Gln Thr  
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 Pro Lys Thr

<210> 17  
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 <212> PRT  
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                     20                      25                      30  
 Thr Asn Ile Gln Cys Pro Lys Glu Ala Val Ile Phe Lys Thr Lys Arg  
                     35                      40                      45  
 Gly Lys Glu Val Cys Ala Asp Pro Lys Glu Arg Trp Val Arg Asp Ser  
                     50                      55                      60  
 Met Lys His Leu Asp Gln Ile Phe Gln Asn Leu Lys Pro  
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<210> 18  
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                     20                      25                      30  
 Thr Cys Cys Tyr Arg Phe Ile Asn Lys Lys Ile Pro Lys Gln Arg Leu  
                     35                      40                      45

Glu Ser Tyr Arg Arg Thr Thr Ser Ser His Cys Pro Arg Glu Ala Val  
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 Ile Phe Lys Thr Lys Leu Asp Lys Glu Ile Cys Ala Asp Pro Thr Gln  
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 Pro Lys Leu

<210> 19  
 <211> 92  
 <212> PRT  
 <213> Homo sapiens

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 Cys Cys Phe Ser Tyr Thr Ser Arg Gln Ile Pro Gln Asn Phe Ile Ala  
 35 40 45  
 Asp Tyr Phe Glu Thr Ser Ser Gln Cys Ser Lys Pro Gly Val Ile Phe  
 50 55 60  
 Leu Thr Lys Arg Ser Arg Gln Val Cys Ala Asp Pro Ser Glu Glu Trp  
 65 70 75 80  
 Val Gln Lys Tyr Val Ser Asp Leu Glu Leu Ser Ala  
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<210> 20  
 <211> 92  
 <212> PRT  
 <213> Homo sapiens

<400> 20  
 Met Lys Leu Cys Val Thr Val Leu Ser Leu Leu Met Leu Val Ala Ala  
 1 5 10 15  
 Phe Cys Ser Pro Ala Leu Ser Ala Pro Met Gly Ser Asp Pro Pro Thr

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Ala	Cys	Cys	Phe	Ser	Tyr	Thr	Ala	Arg	Lys	Leu	Pro	Arg	Asn	Phe	Val
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Val	Asp	Tyr	Tyr	Glu	Thr	Ser	Ser	Leu	Cys	Ser	Gln	Pro	Ala	Val	Val
	50						55					60			
Phe	Gln	Thr	Lys	Arg	Ser	Lys	Gln	Val	Cys	Ala	Asp	Pro	Ser	Glu	Ser
65				70					75					80	
Trp	Val	Gln	Glu	Tyr	Val	Tyr	Asp	Leu	Glu	Leu	Asn				
			85						90						

<210> 21

<211> 91

<212> PRT

<213> Homo sapiens

<400> 21

Met	Lys	Val	Ser	Ala	Ala	Arg	Leu	Ala	Val	Ile	Leu	Ile	Ala	Thr	Ala
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Leu	Cys	Ala	Pro	Ala	Ser	Ala	Ser	Pro	Tyr	Ser	Ser	Asp	Thr	Thr	Pro
		20					25					30			
Cys	Cys	Phe	Ala	Tyr	Ile	Ala	Arg	Pro	Leu	Pro	Arg	Ala	His	Ile	Lys
	35						40					45			
Glu	Tyr	Phe	Tyr	Thr	Ser	Gly	Lys	Cys	Ser	Asn	Pro	Ala	Val	Val	Phe
	50						55					60			
Val	Thr	Arg	Lys	Asn	Arg	Gln	Val	Cys	Ala	Asn	Pro	Glu	Lys	Lys	Trp
65				70					75					80	
Val	Arg	Glu	Tyr	Ile	Asn	Ser	Leu	Glu	Met	Ser					
				85					90						

<210> 22

<211> 89

<212> PRT

<213> Homo sapiens

<400> 22

Met	Asn	Ala	Lys	Val	Val	Val	Val	Leu	Val	Leu	Val	Leu	Thr	Ala	Leu
1				5				10					15		



Cys Leu Ser Asp Gly Lys Pro Val Ser Leu Ser Tyr Arg Cys Pro Cys  
                   20                                  25                                  30  
 Arg Phe Phe Glu Ser His Val Ala Arg Ala Asn Val Lys His Leu Lys  
                   35                                  40                                  45  
 Ile Leu Asn Thr Pro Asn Cys Ala Leu Gln Ile Val Ala Arg Leu Lys  
                   50                                  55                                  60  
 Asn Asn Asn Arg Gln Val Cys Ile Asp Pro Lys Leu Lys Trp Ile Gln  
 65                                  70                                  75                                  80  
 Glu Tyr Leu Glu Lys Ala Leu Asn Lys  
                                   85

<210> 23

<211> 99

<212> PRT

<213> Homo sapiens

<400> 23

Met Thr Ser Lys Leu Ala Val Ala Leu Leu Ala Ala Phe Leu Ile Ser  
   1                                  5                                  10                                  15  
 Ala Ala Leu Cys Glu Gly Ala Val Leu Pro Arg Ser Ala Lys Glu Leu  
                   20                                  25                                  30  
 Arg Cys Gln Cys Ile Lys Thr Tyr Ser Lys Pro Phe His Pro Lys Phe  
                   35                                  40                                  45  
 Ile Lys Glu Leu Arg Val Ile Glu Ser Gly Pro His Cys Ala Asn Thr  
                   50                                  55                                  60  
 Glu Ile Ile Val Lys Leu Ser Asp Gly Arg Glu Leu Cys Leu Asp Pro  
 65                                  70                                  75                                  80  
 Lys Glu Asn Trp Val Gln Arg Val Val Glu Lys Phe Leu Lys Arg Ala  
                                   85                                  90                                  95  
 Glu Asn Ser

<210> 24

<211> 107

<212> PRT

<213> Homo sapiens

<400> 24

Met Ala Arg Ala Ala Leu Ser Ala Ala Pro Ser Asn Pro Arg Leu Leu  
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Arg Val Ala Leu Leu Leu Leu Leu Val Ala Ala Gly Arg Arg Ala  
                    20                      25                      30  
Ala Gly Ala Ser Val Ala Thr Glu Leu Arg Cys Gln Cys Leu Gln Thr  
                    35                      40                      45  
Leu Gln Gly Ile His Pro Lys Asn Ile Gln Ser Val Asn Val Lys Ser  
50                      55                      60  
Pro Gly Pro His Cys Ala Gln Thr Glu Val Ile Ala Thr Leu Lys Asn  
65                      70                      75                      80  
Gly Arg Lys Ala Cys Leu Asn Pro Ala Ser Pro Ile Val Lys Lys Ile  
                    85                      90                      95  
Ile Glu Lys Met Leu Asn Ser Asp Lys Ser Asn  
100                      105

<210> 25

<211> 97

<212> PRT

<213> Homo sapiens

<400> 25

Met Lys Val Ser Ala Ala Leu Leu Trp Leu Leu Leu Ile Ala Ala Ala  
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Phe Ser Pro Gln Gly Leu Ala Gly Pro Ala Ser Val Pro Thr Thr Cys  
                    20                      25                      30  
Cys Phe Asn Leu Ala Asn Arg Lys Ile Pro Leu Gln Arg Leu Glu Ser  
                    35                      40                      45  
Tyr Arg Arg Ile Thr Ser Gly Lys Cys Pro Gln Lys Ala Val Ile Phe  
50                      55                      60  
Lys Thr Lys Leu Ala Lys Asp Ile Cys Ala Asp Pro Lys Lys Lys Trp  
65                      70                      75                      80  
Val Gln Asp Ser Met Lys Tyr Leu Asp Gln Lys Ser Pro Thr Pro Lys  
                    85                      90                      95  
Pro

<210> 26

<211> 148

<212> PRT

<213> Mus musculus

<400> 26

Met Gln Val Pro Val Met Leu Leu Gly Leu Leu Phe Thr Val Ala Gly  
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Trp Ser Ile His Val Leu Ala Gln Pro Asp Ala Val Asn Ala Pro Leu  
20 25 30  
Thr Cys Cys Tyr Ser Phe Thr Ser Lys Met Ile Pro Met Ser Arg Leu  
35 40 45  
Glu Ser Tyr Lys Arg Ile Thr Ser Ser Arg Cys Pro Lys Glu Ala Val  
50 55 60  
Val Phe Val Thr Lys Leu Lys Arg Glu Val Cys Ala Asp Pro Lys Lys  
65 70 75 80  
Glu Trp Val Gln Thr Tyr Ile Lys Asn Leu Asp Arg Asn Gln Met Arg  
85 90 95  
Ser Glu Pro Thr Thr Leu Phe Lys Thr Ala Ser Ala Leu Arg Ser Ser  
100 105 110  
Ala Pro Leu Asn Val Lys Leu Thr Arg Lys Ser Glu Ala Asn Ala Ser  
115 120 125  
Thr Thr Phe Ser Thr Thr Thr Ser Ser Thr Ser Val Gly Val Thr Ser  
130 135 140  
Val Thr Val Asn  
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<210> 27

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> A chemokine peptide variant

<400> 27

Cys Leu Asp Pro Lys Lys Glu Trp Ile Gln

1

5

10

&lt;210&gt; 28

&lt;211&gt; 825

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (34)...(327)

&lt;400&gt; 28

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Met Lys Val Ser Ala Val Leu

1

5

ctg tgc ctg ctg ctc atg aca gca gct ttc aac ccc cag gga ctt gct 102

Leu Cys Leu Leu Leu Met Thr Ala Ala Phe Asn Pro Gln Gly Leu Ala

10

15

20

cag cca gat gca ctc aac gtc cca tct act tgc tgc ttc aca ttt agc 150

Gln Pro Asp Ala Leu Asn Val Pro Ser Thr Cys Cys Phe Thr Phe Ser

25

30

35

agt aag aag atc tcc ttg cag agg ctg aag agc tat gtg atc acc acc 198

Ser Lys Lys Ile Ser Leu Gln Arg Leu Lys Ser Tyr Val Ile Thr Thr

40

45

50

55

agc agg tgt ccc cag aag gct gtc atc ttc aga acc aaa ctg ggc aag 246

Ser Arg Cys Pro Gln Lys Ala Val Ile Phe Arg Thr Lys Leu Gly Lys

60

65

70

gag atc tgt gct gac cca aag gag aag tgg gtc cag aat tat atg aaa 294

Glu Ile Cys Ala Asp Pro Lys Glu Lys Trp Val Gln Asn Tyr Met Lys

75

80

85

cac ctg ggc cgg aaa gct cac acc ctg aag act tgaactctgc taccctact 347

His Leu Gly Arg Lys Ala His Thr Leu Lys Thr

90

95

gaaatcaagc tggagtagct gaaatgactt ttccattctc ctctggcctc ctcttctatg 407  
 ctttggaata cttctaccat aattttcaaa taggatgcat tcgggtttgt gattcaaaat 467  
 gtactatgtg ttaagtaata ttggctatta ttgacttgt tgctgggttg gagtttattt 527  
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<211> 3524

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (80)...(358)

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 Met Asn Ala Lys Val Val Val Val Leu Val Leu  
 1 5 10

gtg ctg acc gcg ctc tgc ctc agc gac ggg aag ccc gtc agc ctg agc 160  
 Val Leu Thr Ala Leu Cys Leu Ser Asp Gly Lys Pro Val Ser Leu Ser  
 15 20 25

tac aga tgc cca tgc cga ttc ttc gaa agc cat gtt gcc aga gcc aac 208  
 Tyr Arg Cys Pro Cys Arg Phe Phe Glu Ser His Val Ala Arg Ala Asn  
 30 35 40

gtc aag cat ctc aaa att ctc aac act cca aac tgt gcc ctt cag att 256  
 Val Lys His Leu Lys Ile Leu Asn Thr Pro Asn Cys Ala Leu Gln Ile

45

50

55

gta gcc cgg ctg aag aac aac aac aga caa gtg tgc att gac ccg aag 304  
 Val Ala Arg Leu Lys Asn Asn Asn Arg Gln Val Cys Ile Asp Pro Lys  
 60 65 70 75

cta aag tgg att cag gag tac ctg gag aaa gct tta aac aag agg ttc 352  
 Leu Lys Trp Ile Gln Glu Tyr Leu Glu Lys Ala Leu Asn Lys Arg Phe  
 80 85 90

aag atg tgagaggggc agacgcctga ggaaccctta cagtaggagc ccagctctga 408  
 Lys Met

aaccagtgtt aggggaagggc ctgccacagc ctcccctgcc agggcagggc cccaggcatt 468  
 gccaaagggt ttgttttgca cacttttgcca tattttcacc atttgattat gtagcaaaat 528  
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<211> 4259

<212> DNA

<213> Mus musculus

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<222> (2990) ... (3079)

<221> CDS

<222> (3491) ... (3506)

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aggcaagtct ggagcctgaa ccaaggatct gctctttgga gacactgcat aaccaagtgt	540
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actcttgact aacagatgct taacactacg caatagttac taaactcttt tctcctcagt	660
aagggactat atatccactt gctaactggt ttttcttaac atcctcaa atctgttttcc	720
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 aaccttccgg aagcctcccc atcagcacc atg aac cca agt gct gcc gtc att 2093

Met Asn Pro Ser Ala Ala Val Ile

1

5

ttc tgc ctc atc ctg ctg ggt ctg agt ggg act caa g gtaagggaca 2140  
 Phe Cys Leu Ile Leu Leu Gly Leu Ser Gly Thr Gln

10

15

20

ccaaggccat ttaattaacg aagtcagaag tcagacgatt aagctcagtt ctaaaccacag 2200  
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 atgaaaccgt gtgctgacct tcctggctct cccctctct tcctgcag gg atc cct 2676

Gly Ile Pro

ctc gca agg acg gtc cgc tgc aac tgc atc cat atc gat gac ggg cca 2724  
 Leu Ala Arg Thr Val Arg Cys Asn Cys Ile His Ile Asp Asp Gly Pro

25

30

35

gtg aga atg agg gcc ata ggg aag ctt gaa atc atc cct gcg agc cta 2772  
 Val Arg Met Arg Ala Ile Gly Lys Leu Glu Ile Ile Pro Ala Ser Leu

40

45

50

55

tcc tgc cca cgt gtt gag atc at gtgagtacaa gcccacctgc cgataaacgt 2825  
 Ser Cys Pro Arg Val Glu Ile Ile

60

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Ala Thr Met

65

aaa aag aat gat gag cag aga tgt ctg aat ccg gaa tct aag acc atc 3047  
 Lys Lys Asn Asp Glu Gln Arg Cys Leu Asn Pro Glu Ser Lys Thr Ile

70

75

80

aag aat tta atg aaa gcg ttt agc caa aaa ag gtaggtttga tgttgctttt 3099  
 Lys Asn Leu Met Lys Ala Phe Ser Gln Lys Arg

85

90

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Ser Lys Arg Ala Pro

95

taactggaga gaagccacgc acacaccccg gtgctgtgat ggacagcaga gagcctgtct 3566  
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<213> Homo sapiens

<220>

<221> CDS

<222> (43)...(363)

<400> 31

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Thr Leu Ser Ala Ala Pro Ser Asn Pro Arg Leu Leu Arg Val Ala Leu  
5 10 15 20

ctg ctc ctg ctc ctg gtg gcc gcc agc cgg cgc gca gca gga gcg ccc 150  
Leu Leu Leu Leu Leu Val Ala Ala Ser Arg Arg Ala Ala Gly Ala Pro  
25 30 35

ctg gcc act gaa ctg cgc tgc cag tgc ttg cag acc ctg cag gga att 198  
Leu Ala Thr Glu Leu Arg Cys Gln Cys Leu Gln Thr Leu Gln Gly Ile  
40 45 50

cac ctc aag aac atc caa agt gtg aag gtg aag tcc ccc gga ccc cac 246  
His Leu Lys Asn Ile Gln Ser Val Lys Val Lys Ser Pro Gly Pro His  
55 60 65

tgc gcc caa acc gaa gtc ata gcc aca ctc aag aat ggg cag aaa gct 294  
Cys Ala Gln Thr Glu Val Ile Ala Thr Leu Lys Asn Gly Gln Lys Ala

70

75

80

tgt ctc aac ccc gca tcg ccc atg gtt aag aaa atc atc gaa aag atg 342  
 Cys Leu Asn Pro Ala Ser Pro Met Val Lys Lys Ile Ile Glu Lys Met  
 85 90 95 100

ctg aaa aat ggc aaa tcc aac tgaccagaag gaaggaggaa gcttattggt 393  
 Leu Lys Asn Gly Lys Ser Asn  
 105

ggctgttcct gaaggaggcc ctgcccttac aggaacagaa gaggaaagag agacacagct 453  
 gcagaggcca cctggattgc gcctaattgtg tttgagcatc acttaggaga agtcttctat 513  
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 agaacaggaa aataaaatat ttaaaaat 1081

&lt;210&gt; 32

&lt;211&gt; 1173

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (107)...(448)

&lt;400&gt; 32

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 cccagttcag gaaccgcga ccgctcgag cgctctcttg accact atg agc ctc 115  
 Met Ser Leu

1

ctg tcc agc cgc gcg gcc cgt gtc ccc ggt cct tcg agc tcc ttg tgc 163  
 Leu Ser Ser Arg Ala Ala Arg Val Pro Gly Pro Ser Ser Ser Leu Cys  
           5                    10                    15

gcg ctg ttg gtg ctg ctg ctg ctg ctg acg cag cca ggg ccc atc gcc 211  
 Ala Leu Leu Val Leu Leu Leu Leu Leu Thr Gln Pro Gly Pro Ile Ala  
           20                    25                    30                    35

agc gct ggt cct gcc gct gct gtg ttg aga gag ctg cgt tgc gtt tgt 259  
 Ser Ala Gly Pro Ala Ala Ala Val Leu Arg Glu Leu Arg Cys Val Cys  
                                 40                    45                    50

tta cag acc acg cag gga gtt cat ccc aaa atg atc agt aat ctg caa 307  
 Leu Gln Thr Thr Gln Gly Val His Pro Lys Met Ile Ser Asn Leu Gln  
                     55                    60                    65

gtg ttc gcc ata ggc cca cag tgc tcc aag gtg gaa gtg gta gcc tcc 355  
 Val Phe Ala Ile Gly Pro Gln Cys Ser Lys Val Glu Val Val Ala Ser  
                     70                    75                    80

ctg aag aac ggg aag gaa att tgt ctt gat cca gaa gcc cct ttt cta 403  
 Leu Lys Asn Gly Lys Glu Ile Cys Leu Asp Pro Glu Ala Pro Phe Leu  
                     85                    90                    95

aag aaa gtc atc cag aaa att ttg gac ggt gga aac aag gaa aac 448  
 Lys Lys Val Ile Gln Lys Ile Leu Asp Gly Gly Asn Lys Glu Asn  
           100                    105                    110

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 ggaggtctct gaaccaggg aagacaagaa ggaaagattt tggtgtgtgt tgtttatttg 568  
 gtttccccag tagttagctt tcttccttg attcctcact tttgaagagt gtgaggaaaa 628  
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aaaaa	1173

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<211> 825

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (34) ... (327)

<400> 33

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Met Lys Val Ser Ala Val Leu	
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ctg tgc ctg ctg ctc atg aca gca gct ttc aac ccc cag gga ctt gct	102
Leu Cys Leu Leu Leu Met Thr Ala Ala Phe Asn Pro Gln Gly Leu Ala	
10 15 20	

cag cca gat gca ctc aac gtc cca tct act tgc tgc ttc aca ttt agc	150
Gln Pro Asp Ala Leu Asn Val Pro Ser Thr Cys Cys Phe Thr Phe Ser	
25 30 35	

agt aag aag atc tcc ttg cag agg ctg aag agc tat gtg atc acc acc	198
Ser Lys Lys Ile Ser Leu Gln Arg Leu Lys Ser Tyr Val Ile Thr Thr	
40 45 50 55	

agc agg tgt ccc cag aag gct gtc atc ttc aga acc aaa ctg ggc aag	246
Ser Arg Cys Pro Gln Lys Ala Val Ile Phe Arg Thr Lys Leu Gly Lys	
60 65 70	

gag atc tgt gct gac cca aag gag aag tgg gtc cag aat tat atg aaa	294
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Glu Ile Cys Ala Asp Pro Lys Glu Lys Trp Val Gln Asn Tyr Met Lys

75

80

85

cac ctg ggc cgg aaa gct cac acc ctg aag act tgaactctgc taccctact 347

His Leu Gly Arg Lys Ala His Thr Leu Lys Thr

90

95

gaaatcaagc tggagtagct gaaatgactt ttccattctc ctctggcctc ctcttctatg 407

ctttggaata cttctaccat aattttcaaa taggatgcat tcggttttgt gattcaaaat 467

gtactatgtg ttaagtaata ttggetatta ttgacttgt tgctggtttg gagtttattt 527

gagtattgct gatcttttct aaagcaaggc cttgagcaag taggttgctg tctctaagcc 587

cccttccctt ccactatgag ctgctggcag tgggttgat tcggttccca ggggttgaga 647

gcatgcctgt gggagtcctg gacatgaagg gatgctgcaa tgtaggaagg agagctcttt 707

gtgaatgtga gggttggtgct aaattattgt ttattgtgga aagatgaatg caatagtagg 767

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<210> 34

<211> 3112

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1192)...(1267)

<221> CDS

<222> (1953)...(2067)

<221> CDS

<222> (2488)...(2575)

<400> 34

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aatggctaca catatttcta ggcacctgac atactgacac ccacctctaa agtattttta 240

tgatccacaa ctagcgttta acacagcgcc ccagtcactc cgagactaat aaatagacaa 300

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Met Gln

1

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Val	Ser	Thr	Ala	Ala	Leu	Ala	Val	Leu	Leu	Cys	Thr	Met	Ala	Leu	Cys	
	5					10					15					

aac	cag	gtc	ctc	tct	gca	cca	c	gtgagtc	ccat	gttggtgtg	tgggtatcac	1297
Asn	Gln	Val	Leu	Ser	Ala	Pro						
	20					25						

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Leu

gct gct gac acg ccg acc gcc tgc tgc ttc agc tac acc tcc cga cag 2002  
Ala Ala Asp Thr Pro Thr Ala Cys Cys Phe Ser Tyr Thr Ser Arg Gln  
30 35 40

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Ile Pro Gln Asn Phe Ile Ala Asp Tyr Phe Glu Thr Ser Ser Gln Cys  
45 50 55

tcc aag ccc agt gtc at gtaagtgccg gtcttctctg tcacctctag 2097  
Ser Lys Pro Ser Val Ile  
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Phe Leu Thr Lys Arg Gly Arg  
65 70

cag gtc tgt gct gac ccc agt gag gag tgg gtc cag aaa tac gtc agt 2557  
Gln Val Cys Ala Asp Pro Ser Glu Glu Trp Val Gln Lys Tyr Val Ser  
75 80 85

gac ctg gag ctg agt gcc tgaggggtcc agaagcttcg aggcccagcg 2605  
Asp Leu Glu Leu Ser Ala  
90

acctcagtg gcccagtgagg gaggagcagg agcctgagcc ttgggaacat gcgtgtgacc 2665  
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<211> 481

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (55) ... (333)

<400> 35

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Lys Ile Ser Val Ala Ala Ile Pro Phe Phe Leu Leu Ile Thr Ile Ala	
5 10 15	

cta ggg acc aag act gaa tcc tcc tca cgg gga cct tac cac ccc tca	153
Leu Gly Thr Lys Thr Glu Ser Ser Ser Arg Gly Pro Tyr His Pro Ser	
20 25 30	

gag tgc tgc ttc acc tac act acc tac aag atc ccg cgt cag cgg att	201
Glu Cys Cys Phe Thr Tyr Thr Thr Tyr Lys Ile Pro Arg Gln Arg Ile	
35 40 45	

atg gat tac tat gag acc aac agc cag tgc tcc aag ccc gga att gtc	249
Met Asp Tyr Tyr Glu Thr Asn Ser Gln Cys Ser Lys Pro Gly Ile Val	
50 55 60 65	

ttc atc acc aaa agg ggc cat tcc gtc tgt acc aac ccc agt gac aag	297
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Phe Ile Thr Lys Arg Gly His Ser Val Cys Thr Asn Pro Ser Asp Lys  
70 75 80

tgg gtc cag gac tat atc aag gac atg aag gag aac tgagtgaccc 343  
Trp Val Gln Asp Tyr Ile Lys Asp Met Lys Glu Asn  
85 90

agaaggggtg gcgaaggcac agctcagaga cataaagaga agatgccaaag gccccctcct 403  
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<222> (885) ... (960)

<221> CDS  
<222> (2149) ... (2260)

<221> CDS  
<222> (3383) ... (3482)

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tcaaataaaa	gccctcagca	ttgcaggacg	gcacagtggg	gagctcttag	cttcaccagg	840
ctcatcaaag	ctgctccagg	aaggcccaag	ccagaccaga	agac atg	cag atc atc	896

Met Gln Ile Ile

1

acc aca gcc ctg	gtg tgc ttg	ctg cta gct	ggg atg	tgg ccg	gaa gat	944
Thr Thr Ala Leu	Val Cys Leu	Leu Leu Ala Gly	Met Trp	Pro Glu	Asp	
5	10	15	20			

gtg gac agc	aag agc a	gtgagtgtgg	caggcatcat	tttgcttctc	tctggggagg	1000
Val Asp Ser	Lys Ser					

25

gcagaaacgt	ggtcagccac	tctgggggtg	gagcaggctt	ctccttgaac	tcaccaactc	1060
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tcttctag	tg cag gta	ccc ttc tcc	aga tgt tgc	ttc tca ttt	gcg gag	2189

Met Gln Val Pro Phe Ser Arg Cys Cys Phe Ser Phe Ala Glu

caa gag att ccc ctg agg gca atc ctg tgt tac aga aat acc agc tcc 2237  
 Gln Glu Ile Pro Leu Arg Ala Ile Leu Cys Tyr Arg Asn Thr Ser Ser  
 40 45 50 55

atc tgc tcc aat gag ggc tta at gtaagtgatc acctgctcaa tctctcccta 2290  
 Ile Cys Ser Asn Glu Gly Leu Ile  
 60

gagaacagaa ccccgccagc ctggaattac aagagtagac actagatgac agtattttac 2350  
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 Phe Lys Leu Lys Arg Gly Lys Glu Ala Cys Ala Leu  
 65 70 75

gac aca gtt gga tgg gtt cag agg cac aga aaa atg ctg agg cac tgc 3467  
 Asp Thr Val Gly Trp Val Gln Arg His Arg Lys Met Leu Arg His Cys  
 80 85 90

ccg tca aaa aga aaa tgagcagatt tctttccatt gtgggctctg gaaaccacat 3522

Pro Ser Lys Arg Lys

95

ggcttcacct gtccccgaaa ctaccagccc tacaccattc cttctgccct gcttttgcta 3582  
ggtcacagag gatctgcttg gtcttgataa gctatgttgt tgcactttaa acatttaa 3642  
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<210> 37

<211> 673

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (67)...(450)

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Met Ser Leu Arg Leu Asp Thr Thr Pro Ser Cys Asn Ser Ala  
1 5 10

aga cca ctt cat gcc ttg cag gtg ctg ctg ctt ctg tca ttg ctg ctg 156  
Arg Pro Leu His Ala Leu Gln Val Leu Leu Leu Ser Leu Leu Leu  
15 20 25 30

act gct ctg gct tcc tcc acc aaa gga caa act aag aga aac ttg gcg 204  
Thr Ala Leu Ala Ser Ser Thr Lys Gly Gln Thr Lys Arg Asn Leu Ala  
35 40 45

aaa ggc aaa gag gaa agt cta gac agt gac ttg tat gct gaa ctc cgc 252  
Lys Gly Lys Glu Glu Ser Leu Asp Ser Asp Leu Tyr Ala Glu Leu Arg  
50 55 60

tgc atg tgt ata aag aca acc tct gga att cat ccc aaa aac atc caa 300  
Cys Met Cys Ile Lys Thr Thr Ser Gly Ile His Pro Lys Asn Ile Gln

65	70	75	
agt ttg gaa gtg atc ggg aaa gga acc cat tgc aac caa gtc gaa gtg			348
Ser Leu Glu Val Ile Gly Lys Gly Thr His Cys Asn Gln Val Glu Val			
80	85	90	
ata gcc aca ctg aag gat ggg agg aaa atc tgc ctg gac cca gat gct			396
Ile Ala Thr Leu Lys Asp Gly Arg Lys Ile Cys Leu Asp Pro Asp Ala			
95	100	105	110
ccc aga atc aag aaa att gta cag aaa aaa ttg gca ggt gat gaa tct			444
Pro Arg Ile Lys Lys Ile Val Gln Lys Lys Leu Ala Gly Asp Glu Ser			
115	120	125	
gct gat taatttggtc tgtttctgcc aaacttcttt aactcccagg aagggtagaa			500
Ala Asp			
ttttgaaacc ttgattttct agagttctca tttattcagg atacctattc ttactgtatt			560
aaaatttgga tatgtgtttc attctgtctc aaaaatcaca ttttattctg agaaggttgg			620
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<210> 38  
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 <212> PRT  
 <213> Homo sapiens

<400> 38  
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<220>

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<222> (40)...(414)

<400> 39

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Val Leu Phe Leu Leu Gly Ile Ile Leu Leu Val Leu Ile Gly Val Gln	
10 15 20	
gga acc cca gta gtg aga aag ggt cgc tgt tcc tgc atc agc acc aac	150
Gly Thr Pro Val Val Arg Lys Gly Arg Cys Ser Cys Ile Ser Thr Asn	
25 30 35	
caa ggg act atc cac cta caa tcc ttg aaa gac ctt aaa caa ttt gcc	198
Gln Gly Thr Ile His Leu Gln Ser Leu Lys Asp Leu Lys Gln Phe Ala	
40 45 50	
cca agc cct tcc tgc gag aaa att gaa atc att gct aca ctg aag aat	246
Pro Ser Pro Ser Cys Glu Lys Ile Glu Ile Ile Ala Thr Leu Lys Asn	
55 60 65	
gga gtt caa aca tgt cta aac cca gat tca gca gat gtg aag gaa ctg	294
Gly Val Gln Thr Cys Leu Asn Pro Asp Ser Ala Asp Val Lys Glu Leu	
70 75 80 85	
att aaa aag tgg gag aaa cag gtc agc caa aag aaa aag caa aag aat	342
Ile Lys Lys Trp Glu Lys Gln Val Ser Gln Lys Lys Lys Gln Lys Asn	
90 95 100	
ggg aaa aaa cat caa aaa aag aaa gtt ctg aaa gtt cga aaa tct caa	390
Gly Lys Lys His Gln Lys Lys Lys Val Leu Lys Val Arg Lys Ser Gln	
105 110 115	
cgt tct cgt caa aag aag act aca taagagacca cttaccaat aagtattctg	444



Arg Ser Arg Gln Lys Lys Thr Thr

120

125

tggtaaaaat gttctatttt aattataccg ctatcattcc aaaggaggat ggcatataat	504
acaaaggctt attaatttga ctagaaaatt taaaacatta ctctgaaatt gtaactaaag	564
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<210> 41  
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<212> PRT  
<213> Homo sapiens

<400> 41  
Glu Ile Cys Leu Asp Pro Glu Ala Pro Phe Leu Lys  
1 5 10

<210> 42  
<211> 12  
<212> PRT  
<213> Homo sapiens

<400> 42  
Gln Val Cys Ala Asp Pro Ser Glu Glu Trp Val Gln  
1 5 10

<210> 43  
<211> 12  
<212> PRT  
<213> Homo sapiens

<400> 43  
Gln Val Cys Ala Asp Pro Ser Glu Ser Trp Val Gln

1

5

10

&lt;210&gt; 44

&lt;211&gt; 12

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 44

Gln Val Cys Ala Asp Pro Ser Glu Ser Trp Val Gln

1

5

10

&lt;210&gt; 45

&lt;211&gt; 125

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 45

Met Lys Lys Ser Gly Val Leu Phe Leu Leu Gly Ile Ile Leu Leu Val

1

5

10

15

Leu Ile Gly Val Gln Gly Thr Pro Val Val Arg Lys Gly Arg Cys Ser

20

25

30

Cys Ile Ser Thr Asn Gln Gly Thr Ile His Leu Gln Ser Leu Lys Asp

35

40

45

Leu Lys Gln Phe Ala Pro Ser Pro Ser Cys Glu Lys Ile Glu Ile Ile

50

55

60

Ala Thr Leu Lys Asn Gly Val Gln Thr Cys Leu Asn Pro Asp Ser Ala

65

70

75

80

Asp Val Lys Glu Leu Ile Lys Lys Trp Glu Lys Gln Val Ser Gln Lys

85

90

95

Lys Lys Gln Lys Asn Gly Lys Lys His Gln Lys Lys Lys Val Leu Lys

100

105

110

Val Arg Lys Ser Gln Arg Ser Arg Gln Lys Lys Thr Thr

115

120

125

&lt;210&gt; 46

&lt;211&gt; 128

&lt;212&gt; PRT

<213> Homo sapiens

<400> 46

Met Ser Leu Arg Leu Asp Thr Thr Pro Ser Cys Asn Ser Ala Arg Pro  
1 5 10 15  
Leu His Ala Leu Gln Val Leu Leu Leu Leu Ser Leu Leu Leu Thr Ala  
20 25 30  
Leu Ala Ser Ser Thr Lys Gly Gln Thr Lys Arg Asn Leu Ala Lys Gly  
35 40 45  
Lys Glu Glu Ser Leu Asp Ser Asp Leu Tyr Ala Glu Leu Arg Cys Met  
50 55 60  
Cys Ile Lys Thr Thr Ser Gly Ile His Pro Lys Asn Ile Gln Ser Leu  
65 70 75 80  
Glu Val Ile Gly Lys Gly Thr His Cys Asn Gln Val Glu Val Ile Ala  
85 90 95  
Thr Leu Lys Asp Gly Arg Lys Ile Cys Leu Asp Pro Asp Ala Pro Arg  
100 105 110  
Ile Lys Lys Ile Val Gln Lys Lys Leu Ala Gly Asp Glu Ser Ala Asp  
115 120 125

<210> 47

<211> 96

<212> PRT

<213> Homo sapiens

<400> 47

Met Gln Ile Ile Thr Thr Ala Leu Val Cys Leu Leu Leu Ala Gly Met  
1 5 10 15  
Trp Pro Glu Asp Val Asp Ser Lys Ser Met Gln Val Pro Phe Ser Arg  
20 25 30  
Cys Cys Phe Ser Phe Ala Glu Gln Glu Ile Pro Leu Arg Ala Ile Leu  
35 40 45  
Cys Tyr Arg Asn Thr Ser Ser Ile Cys Ser Asn Glu Gly Leu Ile Phe  
50 55 60  
Lys Leu Lys Arg Gly Lys Glu Ala Cys Ala Leu Asp Thr Val Gly Trp  
65 70 75 80  
Val Gln Arg His Arg Lys Met Leu Arg His Cys Pro Ser Lys Arg Lys

85

90

95

&lt;210&gt; 48

&lt;211&gt; 93

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 48

Met Lys Ile Ser Val Ala Ala Ile Pro Phe Phe Leu Leu Ile Thr Ile  
 1 5 10 15  
 Ala Leu Gly Thr Lys Thr Glu Ser Ser Ser Arg Gly Pro Tyr His Pro  
 20 25 30  
 Ser Glu Cys Cys Phe Thr Tyr Thr Thr Tyr Lys Ile Pro Arg Gln Arg  
 35 40 45  
 Ile Met Asp Tyr Tyr Glu Thr Asn Ser Gln Cys Ser Lys Pro Gly Ile  
 50 55 60  
 Val Phe Ile Thr Lys Arg Gly His Ser Val Cys Thr Asn Pro Ser Asp  
 65 70 75 80  
 Lys Trp Val Gln Asp Tyr Ile Lys Asp Met Lys Glu Asn  
 85 90

&lt;210&gt; 49

&lt;211&gt; 93

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 49

Met Gln Val Ser Thr Ala Ala Leu Ala Val Leu Leu Cys Thr Met Ala  
 1 5 10 15  
 Leu Cys Asn Gln Val Leu Ser Ala Pro Leu Ala Ala Asp Thr Pro Thr  
 20 25 30  
 Ala Cys Cys Phe Ser Tyr Thr Ser Arg Gln Ile Pro Gln Asn Phe Ile  
 35 40 45  
 Ala Asp Tyr Phe Glu Thr Ser Ser Gln Cys Ser Lys Pro Ser Val Ile  
 50 55 60  
 Phe Leu Thr Lys Arg Gly Arg Gln Val Cys Ala Asp Pro Ser Glu Glu  
 65 70 75 80

Trp Val Gln Lys Tyr Val Ser Asp Leu Glu Leu Ser Ala

85

90

<210> 50

<211> 98

<212> PRT

<213> Homo sapiens

<400> 50

Met Lys Val Ser Ala Val Leu Leu Cys Leu Leu Leu Met Thr Ala Ala

1

5

10

15

Phe Asn Pro Gln Gly Leu Ala Gln Pro Asp Ala Leu Asn Val Pro Ser

20

25

30

Thr Cys Cys Phe Thr Phe Ser Ser Lys Lys Ile Ser Leu Gln Arg Leu

35

40

45

Lys Ser Tyr Val Ile Thr Thr Ser Arg Cys Pro Gln Lys Ala Val Ile

50

55

60

Phe Arg Thr Lys Leu Gly Lys Glu Ile Cys Ala Asp Pro Lys Glu Lys

65

70

75

80

Trp Val Gln Asn Tyr Met Lys His Leu Gly Arg Lys Ala His Thr Leu

85

90

95

Lys Thr

<210> 51

<211> 839

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (54) ... (344)

<400> 51

caaccagaa accaccacct ctcacgcaa agctcacarc ttcagcctcc aac atg

56

Met

1

aag gtc tcc gca gca ctt ctg tgg ctg ctg ctc ata gca gct gcc ttc 104  
 Lys Val Ser Ala Ala Leu Leu Trp Leu Leu Leu Ile Ala Ala Ala Phe  
                   5                                  10                                  15

agc ccc cag ggg ctc gct ggg cca gct tct gtc cca acc acc tgc tgc 152  
 Ser Pro Gln Gly Leu Ala Gly Pro Ala Ser Val Pro Thr Thr Cys Cys  
                   20                                  25                                  30

ttt aac ctg gcc aat agg aag ata ccc ctt cag cga cta gag agc tac 200  
 Phe Asn Leu Ala Asn Arg Lys Ile Pro Leu Gln Arg Leu Glu Ser Tyr  
                   35                                  40                                  45

agg aga atc acc agt ggc aaa tgt ccc cag aaa gct gtg atc ttc aag 248  
 Arg Arg Ile Thr Ser Gly Lys Cys Pro Gln Lys Ala Val Ile Phe Lys  
                   50                                  55                                  60                                  65

acc aaa ctg gcc aag gat atc tgt gcc gac ccc aag aag aag tgg gtg 296  
 Thr Lys Leu Ala Lys Asp Ile Cys Ala Asp Pro Lys Lys Lys Trp Val  
                                   70                                  75                                  80

cag gat tcc atg aag tat ctg gac caa aaa tct cca act cca aag cca 344  
 Gln Asp Ser Met Lys Tyr Leu Asp Gln Lys Ser Pro Thr Pro Lys Pro  
                                   85                                  90                                  95

taaataatca ccatttttga aaccaaacca gagcctgagt gttgcctaata ttgttttccc 404  
 ttcttacaat gcattctgag gtaacctcat tatcagtcca aagggcatgg gttttattat 464  
 atatatatat atatattttt ttttaaaaaa aaacgtattg catttaattt attgaggctt 524  
 taaaacttat cctccatgaa tatcagttat ttttaaactg taaagctttg tgcagattct 584  
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<210> 52

<211> 114

<212> PRT

<213> Homo sapiens

<400> 52

Met Ser Leu Leu Ser Ser Arg Ala Ala Arg Val Pro Gly Pro Ser Ser  
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Ser Leu Cys Ala Leu Leu Val Leu Leu Leu Leu Thr Gln Pro Gly  
20 25 30  
Pro Ile Ala Ser Ala Gly Pro Ala Ala Ala Val Leu Arg Glu Leu Arg  
35 40 45  
Cys Val Cys Leu Gln Thr Thr Gln Gly Val His Pro Lys Met Ile Ser  
50 55 60  
Asn Leu Gln Val Phe Ala Ile Gly Pro Gln Cys Ser Lys Val Glu Val  
65 70 75 80  
Val Ala Ser Leu Lys Asn Gly Lys Glu Ile Cys Leu Asp Pro Glu Ala  
85 90 95  
Pro Phe Leu Lys Lys Val Ile Gln Lys Ile Leu Asp Gly Gly Asn Lys  
100 105 110  
Glu Asn

<210> 53

<211> 107

<212> PRT

<213> Homo sapiens

<400> 53

Met Ala Arg Ala Thr Leu Ser Ala Ala Pro Ser Asn Pro Arg Leu Leu  
1 5 10 15  
Arg Val Ala Leu Leu Leu Leu Leu Val Ala Ala Ser Arg Arg Ala  
20 25 30  
Ala Gly Ala Pro Leu Ala Thr Glu Leu Arg Cys Gln Cys Leu Gln Thr  
35 40 45  
Leu Gln Gly Ile His Leu Lys Asn Ile Gln Ser Val Lys Val Lys Ser  
50 55 60  
Pro Gly Pro His Cys Ala Gln Thr Glu Val Ile Ala Thr Leu Lys Asn  
65 70 75 80



Gly Gln Lys Ala Cys Leu Asn Pro Ala Ser Pro Met Val Lys Lys Ile  
85 90 95  
Ile Glu Lys Met Leu Lys Asn Gly Lys Ser Asn  
100 105

<210> 54  
<211> 98  
<212> PRT  
<213> Homo sapiens

<400> 54  
Met Asn Pro Ser Ala Ala Val Ile Phe Cys Leu Ile Leu Leu Gly Leu  
1 5 10 15  
Ser Gly Thr Gln Gly Ile Pro Leu Ala Arg Thr Val Arg Cys Asn Cys  
20 25 30  
Ile His Ile Asp Asp Gly Pro Val Arg Met Arg Ala Ile Gly Lys Leu  
35 40 45  
Glu Ile Ile Pro Ala Ser Leu Ser Cys Pro Arg Val Glu Ile Ile Ala  
50 55 60  
Thr Met Lys Lys Asn Asp Glu Gln Arg Cys Leu Asn Pro Glu Ser Lys  
65 70 75 80  
Thr Ile Lys Asn Leu Met Lys Ala Phe Ser Gln Lys Arg Ser Lys Arg  
85 90 95  
Ala Pro

<210> 55  
<211> 1041  
<212> DNA  
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<220>  
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<222> (18)...(338)

<400> 55  
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Met Ala Arg Ala Ala Leu Ser Ala Ala Pro Ser

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5

10

aat ccc cgg ctc ctg cga gtg gca ctg ctg ctc ctg ctc ctg gta gcc 98  
Asn Pro Arg Leu Leu Arg Val Ala Leu Leu Leu Leu Leu Leu Val Ala

15

20

25

gct ggc cgg cgc gca gca gga gcg tcc gtg gcc act gaa ctg cgc tgc 146  
Ala Gly Arg Arg Ala Ala Gly Ala Ser Val Ala Thr Glu Leu Arg Cys

30

35

40

cag tgc ttg cag acc ctg cag gga att cac ccc aag aac atc caa agt 194  
Gln Cys Leu Gln Thr Leu Gln Gly Ile His Pro Lys Asn Ile Gln Ser

45

50

55

gtg aac gtg aag tcc ccc gga ccc cac tgc gcc caa acc gaa gtc ata 242  
Val Asn Val Lys Ser Pro Gly Pro His Cys Ala Gln Thr Glu Val Ile  
60 65 70 75

gcc aca ctc aag aat ggg cgg aaa gct tgc ctc aat cct gca tcc ccc 290  
Ala Thr Leu Lys Asn Gly Arg Lys Ala Cys Leu Asn Pro Ala Ser Pro

80

85

90

ata gtt aag aaa atc atc gaa aag atg ctg aac agt gac aaa tcc aac 338  
Ile Val Lys Lys Ile Ile Glu Lys Met Leu Asn Ser Asp Lys Ser Asn

95

100

105

tgaccagaag ggaggaggaa gctcactggt ggctgttctt gaaggaggcc ctgcccttat 398  
aggaacagaa gaggaagag agacacagct gcagaggcca cctggattgt gcctaattgtg 458  
tttgagcatc gcttaggaga agtcttctat ttattttattt attcattagt tttgaagatt 518  
ctatgttaat atttttagtg taaaataatt aagggtatga ttaactctac ctgcacactg 578  
tcctattata ttcattcttt ttgaaatgtc aaccccaagt tagttcaatc tggattcata 638  
tttaatttga aggtagaatg ttttcaaagc ttctccagtc attatgttaa tttttctgag 698  
gagcctgcaa catgccagcc actgtgatag aggctggcgg atccaagcaa atggccaatg 758  
agatcattgt gaaggcaggg gaatgtatgt gcacatctgt tttgtaactg ttttagatgaa 818  
tgtcagttgt tattttattga aatgatttca cagtgtgtgg tcaacatttc tcatgttgaa 878  
actttaagaa ctaaaatggt ctaaatatcc cttggacatt ttatgtcttt cttgtaaggc 938

atactgcctt gtttaatggt agttttacag tgtttctggc ttagaacaaa ggggcttaat 998  
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<210> 56  
<211> 93  
<212> PRT  
<213> Homo sapiens

<400> 56  
Met Asn Ala Lys Val Val Val Val Leu Val Leu Val Leu Thr Ala Leu  
1 5 10 15  
Cys Leu Ser Asp Gly Lys Pro Val Ser Leu Ser Tyr Arg Cys Pro Cys  
20 25 30  
Arg Phe Phe Glu Ser His Val Ala Arg Ala Asn Val Lys His Leu Lys  
35 40 45  
Ile Leu Asn Thr Pro Asn Cys Ala Leu Gln Ile Val Ala Arg Leu Lys  
50 55 60  
Asn Asn Asn Arg Gln Val Cys Ile Asp Pro Lys Leu Lys Trp Ile Gln  
65 70 75 80  
Glu Tyr Leu Glu Lys Ala Leu Asn Lys Arg Phe Lys Met  
85 90

<210> 57  
<211> 107  
<212> PRT  
<213> Homo sapiens

<400> 57  
Met Ala Arg Ala Ala Leu Ser Ala Ala Pro Ser Asn Pro Arg Leu Leu  
1 5 10 15  
Arg Val Ala Leu Leu Leu Leu Leu Val Ala Ala Gly Arg Arg Ala  
20 25 30  
Ala Gly Ala Ser Val Ala Thr Glu Leu Arg Cys Gln Cys Leu Gln Thr  
35 40 45  
Leu Gln Gly Ile His Pro Lys Asn Ile Gln Ser Val Asn Val Lys Ser  
50 55 60  
Pro Gly Pro His Cys Ala Gln Thr Glu Val Ile Ala Thr Leu Lys Asn

65		70		75		80									
Gly	Arg	Lys	Ala	Cys	Leu	Asn	Pro	Ala	Ser	Pro	Ile	Val	Lys	Lys	Ile
		85		90		95									
Ile	Glu	Lys	Met	Leu	Asn	Ser	Asp	Lys	Ser	Asn					
		100		105											

<210> 58  
 <211> 1560  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (102)...(398)

<400> 58  
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 ggaagaaacc accggaagga accatctcac tgtgtgtaaa c atg act tcc aag ctg 116  
 Met Thr Ser Lys Leu  
 1 5

gcc gtg gct ctc ttg gca gcc ttc ctg att tct gca gct ctg tgt gaa 164  
 Ala Val Ala Leu Leu Ala Ala Phe Leu Ile Ser Ala Ala Leu Cys Glu  
 10 15 20

ggc gca gtt ttg cca agg agt gct aaa gaa ctt aga tgt cag tgc ata 212  
 Gly Ala Val Leu Pro Arg Ser Ala Lys Glu Leu Arg Cys Gln Cys Ile  
 25 30 35

aag aca tac tcc aaa cct ttc cac ccc aaa ttt atc aaa gaa ctg aga 260  
 Lys Thr Tyr Ser Lys Pro Phe His Pro Lys Phe Ile Lys Glu Leu Arg  
 40 45 50

gtg att gag agt gga cca cac tgc gcc aac aca gaa att att gta aag 308  
 Val Ile Glu Ser Gly Pro His Cys Ala Asn Thr Glu Ile Ile Val Lys  
 55 60 65



<210> 60

<211> 14

<212> PRT

<213> Homo sapiens

<400> 60

Val Asp Tyr Tyr Glu Thr Ser Ser Leu Cys Ser Gln Pro Ala  
1 5 10

<210> 61

<211> 15

<212> PRT

<213> Homo sapiens

<400> 61

Val Asp Tyr Tyr Glu Thr Ser Ser Leu Cys Ser Gln Pro Ala Val  
1 5 10 15

<210> 62

<211> 15

<212> PRT

<213> Homo sapiens

<400> 62

Glu Ser Tyr Arg Arg Ile Thr Asn Ile Gln Cys Pro Lys Glu Ala  
1 5 10 15

<210> 63

<211> 15

<212> PRT

<213> Homo sapiens

<400> 63

Glu Ser Tyr Arg Arg Thr Thr Ser Ser His Cys Pro Arg Glu Ala  
1 5 10 15

<210> 64

<211> 15

<212> PRT

<213> Homo sapiens

<400> 64

Lys Ser Tyr Val Ile Thr Thr Ser Arg Cys Pro Gln Lys Ala Val  
1 5 10 15

<210> 65

<211> 12

<212> PRT

<213> Homo sapiens

<400> 65

Glu Ile Cys Ala Asp Pro Lys Glu Lys Trp Val Gln  
1 5 10

<210> 66

<211> 12

<212> PRT

<213> Homo sapiens

<400> 66

Glu Ile Cys Ala Asp Pro Thr Gln Lys Trp Val Gln  
1 5 10

<210> 67

<211> 12

<212> PRT

<213> Homo sapiens

<400> 67

Glu Ile Cys Ala Asp Pro Lys Glu Arg Trp Val Arg  
1 5 10

<210> 68

<211> 12

<212> PRT

<213> Homo sapiens

<400> 68

Asp Ile Cys Ala Asp Pro Lys Lys Lys Trp Val Gln

1 5 10

<210> 69

<211> 15

<212> PRT

<213> Homo sapiens

<400> 69

Ser Val Asn Val Lys Ser Pro Gly Pro His Cys Ala Gln Thr Glu

1 5 10 15

<210> 70

<211> 15

<212> PRT

<213> Homo sapiens

<400> 70

Ser Val Lys Val Lys Ser Pro Gly Pro His Cys Ala Gln Thr Glu

1 5 10 15

<210> 71

<211> 15

<212> PRT

<213> Homo sapiens

<400> 71

Ser Val Asn Val Arg Ser Pro Gly Pro His Cys Ala Gln Thr Glu

1 5 10 15

<210> 72

<211> 12

<212> PRT



<213> Homo sapiens

<400> 72

Lys Ala Cys Leu Asn Pro Ala Ser Pro Ile Val Lys  
1 5 10

<210> 73

<211> 12

<212> PRT

<213> Homo sapiens

<400> 73

Lys Ala Cys Leu Asn Pro Ala Ser Pro Met Val Lys  
1 5 10

<210> 74

<211> 12

<212> PRT

<213> Homo sapiens

<400> 74

Lys Ala Cys Leu Asn Pro Ala Ser Pro Met Val Gln  
1 5 10

<210> 75

<211> 12

<212> PRT

<213> Homo sapiens

<400> 75

Lys Ser Tyr Lys Ile Ile Thr Ser Ser Lys Cys Pro  
1 5 10

<210> 76

<211> 661

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (32) ... (331)

<400> 76

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Met Lys Val Ser Ala Ala Leu	
1 5	
ctg tgc ctg ctg ctc ata gca gcc acc ttc att ccc caa ggg ctc gct	100
Leu Cys Leu Leu Leu Ile Ala Ala Thr Phe Ile Pro Gln Gly Leu Ala	
10 15 20	
cag cca gat gca atc aat gcc cca gtc acc tgc tgc tat aac ttc acc	148
Gln Pro Asp Ala Ile Asn Ala Pro Val Thr Cys Cys Tyr Asn Phe Thr	
25 30 35	
aat agg aag atc tca gtg cag agg ctc gcg agc tat aga aga atc acc	196
Asn Arg Lys Ile Ser Val Gln Arg Leu Ala Ser Tyr Arg Arg Ile Thr	
40 45 50 55	
agc agc aag tgt ccc aaa gaa gct gtg atc ttc aag acc att gtg gcc	244
Ser Ser Lys Cys Pro Lys Glu Ala Val Ile Phe Lys Thr Ile Val Ala	
60 65 70	
aag gag atc tgt gct gac ccc aag cag aag tgg gtt cag gat tcc atg	292
Lys Glu Ile Cys Ala Asp Pro Lys Gln Lys Trp Val Gln Asp Ser Met	
75 80 85	
gac cac ctg gac aag caa acc caa act ccg aag act tga acactcactc	341
Asp His Leu Asp Lys Gln Thr Gln Thr Pro Lys Thr *	
90 95	
cacaacccaa gaatctgcag ctaacttatt ttcccctagc tttccccaga catcctgttt	401
tattttatta taatgaattt tgtttggtga tgtgaaacat tatgccttaa gtaatgttaa	461
ttcttattta agttattgat gttttaagtt tatctttcat ggtactagtg ttttttagat	521
acagagactt ggggaaattg cttttcctct tgaaccacag ttctaccctt gggatgtttt	581

gaggggtcttt gcaagaatca tttttttaac attccaatgc atttaataca aagaattgct 641  
 aaaatattat tgtggaaatg 661

<210> 77  
 <211> 1847  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (80)...(346)

<400> 77  
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 ccgccccgcc gcccgcgcc atg aac gcc aag gtc gtg gtc gtg ctg gtc ctc 112  
 Met Asn Ala Lys Val Val Val Val Leu Val Leu  
 1 5 10

gtg ctg acc gcg ctc tgc ctc agc gac ggg aag ccc gtc agc ctg agc 160  
 Val Leu Thr Ala Leu Cys Leu Ser Asp Gly Lys Pro Val Ser Leu Ser  
 15 20 25

tac aga tgc cca tgc cga ttc ttc gaa agc cat gtt gcc aga gcc aac 208  
 Tyr Arg Cys Pro Cys Arg Phe Phe Glu Ser His Val Ala Arg Ala Asn  
 30 35 40

gtc aag cat ctc aaa att ctc aac act cca aac tgt gcc ctt cag att 256  
 Val Lys His Leu Lys Ile Leu Asn Thr Pro Asn Cys Ala Leu Gln Ile  
 45 50 55

gta gcc cgg ctg aag aac aac aac aga caa gtg tgc att gac ccg aag 304  
 Val Ala Arg Leu Lys Asn Asn Asn Arg Gln Val Cys Ile Asp Pro Lys  
 60 65 70 75

cta aag tgg att cag gag tac ctg gag aaa gct tta aac aag 346  
 Leu Lys Trp Ile Gln Glu Tyr Leu Glu Lys Ala Leu Asn Lys  
 80 85

taagcacaac agccaaaaag gactttccgc tagaccact cgaggaaaac taaaaccttg	406
tgagagatga aagggcaaag acgtggggga gggggcctta accatgagga ccagggtgtgt	466
gtgtgggggtg ggcacattga tctgggatcg ggcctgaggt ttgcagcatt tagaccctgc	526
atztatagca tacggtatga tattgcagct tatattcatc catgccctgt acctgtgcac	586
gttggaactt ttattactgg ggtttttcta agaaagaaat tgtattatca acagcatttt	646
caagcagtta gttccttcat gatcatcaca atcatcatca ttctcattct cattttttta	706
atcaacgagt acttcaagat ctgaatttgg cttgtttgga gcatctcctc tgctccctcg	766
gggagtctgg gcacagtcag gtgggtggctt aacagggagc tggaaaaagt gtcctttctt	826
cagacactga ggctcccgca gcagcgcccc tcccaagagg aaggcctctg tggcactcag	886
ataccgactg gggctggggc gccgccactg ccttcacctc ctctttcaaa cctcagtgat	946
tggctctgtg ggctccatgt agaagccact attactggga ctgtctcaga gaccctctc	1006
ccagctattc ctactctctc cccgactccg agagcatgct taatcttgct tctgcttctc	1066
atztatgtag cctgatcagc gccgcaccag ccgggaagag ggtgattgct ggggctctg	1126
ccctgcattc ctctcctccc agggcctgcc ccacagctcg ggccctctgt gagatccgtc	1186
tttggcctcc tccagaatgg agctggccct ctctgggga tgtgtaatgg tccccctgct	1246
tacccgcaaa agacaagtct ttacagaatc aaatgcaatt ttaaattctga gagctcgctt	1306
gagtgactgg gtttgtgatt gcctctgaag cctatgtatg ccatggaggc actaacaaac	1366
tctgaggttt ccgaaatcag aagcgaaaaa atcagtgaat aaaccatcat cttgccacta	1426
ccccctctg aagccacagc aggggttcag gttccaatca gaactgttgg caagggtgaca	1486
tttccatgca tagatgcat ccacagaagg tcctgggtgg atttgtaact ttttgcaagg	1546
cattttttta tatatatatt tgtgcacatt tttttttacg attctttaga aaacaaatgt	1606
atttcaaaat atatttatag tcgaacaagt catatatatg aatgagagcc atatgaatgt	1666
cagtagttta tacttctcta ttatctcaaa ctactggcaa tttgtaaaga aatatatatg	1726
atatataaat gtgattgcag cttttcaatg ttagccacag tgtatttttt cacttgact	1786
aaaattgtat caaatgtgac atttatatgca ctagcaataa aatgctaatt gtttcatggt	1846
a	1847

<210> 78

<211> 1160

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (27) ... (299)

<400> 78

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Met Lys Val Ser Ala Ala Arg Leu Ala	
1 5	
gtc atc ctc att gct act gcc ctc tgc gct cct gca tct gcc tcc cca	101
Val Ile Leu Ile Ala Thr Ala Leu Cys Ala Pro Ala Ser Ala Ser Pro	
10 15 20 25	
tat tcc tcg gac acc aca ccc tgc tgc ttt gcc tac att gcc cgc cca	149
Tyr Ser Ser Asp Thr Thr Pro Cys Cys Phe Ala Tyr Ile Ala Arg Pro	
30 35 40	
ctg ccc cgt gcc cac atc aag gag tat ttc tac acc agt ggc aag tgc	197
Leu Pro Arg Ala His Ile Lys Glu Tyr Phe Tyr Thr Ser Gly Lys Cys	
45 50 55	
tcc aac cca gca gtc gtc ttt gtc acc cga aag aac cgc caa gtg tgt	245
Ser Asn Pro Ala Val Val Phe Val Thr Arg Lys Asn Arg Gln Val Cys	
60 65 70	
gcc aac cca gag aag aaa tgg gtt cgg gag tac atc aac tct ttg gag	293
Ala Asn Pro Glu Lys Lys Trp Val Arg Glu Tyr Ile Asn Ser Leu Glu	
75 80 85	
atg agc taggatggag agtccttgaa cctgaactta cacaaatttg cctgtttctg	349
Met Ser	
90	
cttgctcttg tcttagcttg ggaggcttcc cctcactatc ctaccccacc cgtccttga	409
agggcccaga ttctgaccac gacgagcagc agttacaaaa accttcccca ggctggacgt	469
ggtggctcag ccttgtaatc ccagcacttt gggaggccaa ggtgggtgga tcacttgagg	529
tcaggagttc gagacagcct ggccaacatg atgaaacccc atgtgtacta aaaatacaaa	589
aaattagccg ggcgtggtag cgggcgcctg tagtcccagc tactcgggag gctgaggcag	649
gagaatggcg tgaacccggg agcggagcct gcagtgagcc gagatcgcg cactgcactc	709
cagcctgggc gacagagcga gactccgtct caaaaaaaaaa aaaaaaaatac	769
aaaaattagc cgcgtgggtg cccacgcctg taatcccagc tactcgggag gctaaggcag	829

gaaaattgtt tgaaccagg aggtggaggg tgcagtgagc tgagattgtg ccacttcact 889  
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 ctctggcttt gccttggtt tgcaagggt ctgtgacaag gaaggaagtc agcatgcctc 1069  
 tagaggcaag gaagggagga aactgcact cttaagcttc cgccgtctca acccctcaca 1129  
 ggagcttact ggcaaacatg aaaaatcggg g 1160

<210> 79

<211> 696

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (109)...(384)

<400> 79

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 Met Lys Leu  
 1

tgc gtg act gtc ctg tct ctc ctc atg cta gta gct gcc ttc tgc tct 165  
 Cys Val Thr Val Leu Ser Leu Leu Met Leu Val Ala Ala Phe Cys Ser  
 5 10 15

cca gcg ctc tca gca cca atg ggc tca gac cct ccc acc gcc tgc tgc 213  
 Pro Ala Leu Ser Ala Pro Met Gly Ser Asp Pro Pro Thr Ala Cys Cys  
 20 25 30 35

ttt tct tac acc gcg agg aag ctt cct cgc aac ttt gtg gta gat tac 261  
 Phe Ser Tyr Thr Ala Arg Lys Leu Pro Arg Asn Phe Val Val Asp Tyr  
 40 45 50

tat gag acc agc agc ctc tgc tcc cag cca gct gtg gta ttc caa acc 309  
 Tyr Glu Thr Ser Ser Leu Cys Ser Gln Pro Ala Val Val Phe Gln Thr  
 55 60 65

aaa aga agc aag caa gtc tgt gct gat ccc agt gaa tcc tgg gtc cag 357  
 Lys Arg Ser Lys Gln Val Cys Ala Asp Pro Ser Glu Ser Trp Val Gln

70 75 80

gag tac gtg tat gac ctg gaa ctg aac tgagctgctc agagacagga 404  
 Glu Tyr Val Tyr Asp Leu Glu Leu Asn

85 90

agtcttcagg gaaggtcacc tgagcccgga tgcttctcca tgagacacat ctctccata 464  
 ctccaggactc ctctccgcag ttctgtgcc ttctcttaat ttaatctttt ttatgtgccg 524  
 tgttattgta ttaggtgtca tttccattat ttatattagt ttagccaaag gataagtgtc 584  
 ctatgggggat ggtccactgt cactgtttct ctgctgttgc aaatacatgg ataacacatt 644  
 tgattctgtg tgttttccat aataaaactt taaaataaaa tgcagacagt ta 696

<210> 80

<211> 2738

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (123) ... (353)

<400> 80

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 tt gct cag cca gat tca gtt tcc att cca atc acc tgc tgc ttt aac 167

Ala Gln Pro Asp Ser Val Ser Ile Pro Ile Thr Cys Cys Phe Asn

1 5 10 15

gtg atc aat agg aaa att cct atc cag agg ctg gag agc tac aca aga 215  
 Val Ile Asn Arg Lys Ile Pro Ile Gln Arg Leu Glu Ser Tyr Thr Arg

20 25 30

atc acc aac atc caa tgt ccc aag gaa gct gtg atc ttc aag acc caa 263  
 Ile Thr Asn Ile Gln Cys Pro Lys Glu Ala Val Ile Phe Lys Thr Gln

cgg ggc aag gag gtc tgt gct gac ccc aag gag aga tgg gtc agg gat 311  
 Arg Gly Lys Glu Val Cys Ala Asp Pro Lys Glu Arg Trp Val Arg Asp

50

55

60

tcc atg aag cat ctg gac caa ata ttt caa aat ctg aag cca 353  
 Ser Met Lys His Leu Asp Gln Ile Phe Gln Asn Leu Lys Pro

65

70

75

tgagccttca tacatggact gagagtcaga gcttgaagaa aagcttattt attttcccca 413  
 acctcccca ggtgcagtgt gacattattt tattataaca tccacaaaga gattattttt 473  
 aaataattta aagcataata tttcttaaaa agtatttaat tatatttaag ttggtgatgt 533  
 tttactcta tctgtcatat atcctagtga atgtaaaatg caaaatcctg gtgatgtgtt 593  
 ttttgtttt gttttcctgt gagctcaact aagttcacgg caaaatgtca ttgttctccc 653  
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 cttagttaaa ctttcgttta ttgctaaagg ttaatcactg ctgtttcccg tgggggtgtg 1013  
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 ggtgatttag aggggtgaact cactggaatg gggatgcttg catgtgtaat cttactaaga 1133  
 gctaatagaag aggctaggac caaaccagaa acctccaatt ctcatgtgga agcccatgcc 1193  
 ctcaccctcc aacatgaaag cctctgcagc acttctgtgt ctgctgctca cagcagctgc 1253  
 tttcagcccc caggggcttg ctcagccagt tgggattaat acttcaacta cctgctgcta 1313  
 cagatttatc aataagaaaa tccctaagca gaggctggag agctacagaa ggaccaccag 1373  
 tagccactgt ccccggaag ctgtaatctt caagaccaa ctggacaagg agatctgtgc 1433  
 tgacccaca cagaagtggg tccaggactt tatgaagcac ctggacaaga aaacccaaac 1493  
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Met Gln Val Ser Thr Ala Ala Leu Ala Val	
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ctc ctc tgc acc atg gct ctc tgc aac cag ttc tct gca tca ctt gct	161
Leu Leu Cys Thr Met Ala Leu Cys Asn Gln Phe Ser Ala Ser Leu Ala	
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Ala Asp Thr Pro Thr Ala Cys Cys Phe Ser Tyr Thr Ser Arg Gln Ile	
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Pro Gln Asn Phe Ile Ala Asp Tyr Phe Glu Thr Ser Ser Gln Cys Ser	
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Lys Pro Gly Val Ile Phe Leu Thr Lys Arg Ser Arg Gln Val Cys Ala	
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Asp Pro Ser Glu Glu Trp Val Gln Lys Tyr Val Ser Asp Leu Glu Leu	
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Ser Ala	
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 35 40 45  
 Lys Ser Tyr Val Ile Thr Thr Ser Arg Cys Pro Gln Lys Ala Val Ile  
 50 55 60  
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 Lys Thr

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Arg Arg Ile Thr Ser Ser Lys

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